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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,116	11/14/2003	Harold E. Hamilton	M366.12-0027	1937

27367 7590 04/11/2007  
WESTMAN CHAMPLIN & KELLY, P.A.  
SUITE 1400  
900 SECOND AVENUE SOUTH  
MINNEAPOLIS, MN 55402-3319

EXAMINER
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JIANG, CHEN WEN

ART UNIT	PAPER NUMBER
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3744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/714,116	<b>Applicant(s)</b> HAMILTON ET AL.	
	<b>Examiner</b> Chen-Wen Jiang	<b>Art Unit</b> 3744	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20070129</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on 1/29/2007 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1,2,4,5,6,7,8,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. (U.S. Patent Number 5,582,235) in view of Gabuzda et al. (U.S. Patent Number 4,851,965).

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In regard to claims 1,2,4,5,6,7,8 and 11, Hamilton '235 discloses a valve system for a burn-in oven having a plurality of controllable valves 100a-100n positioned above a plurality of integrated circuits 25a-25n on a burn-in board 15 in which each valve is operated by a separate electric motor 110a-110n under control of a controller 35 in response to the individual integrated circuit's temperature sensors 30a-30n. Hamilton '235 discloses a blower 45 providing a gas flow to the nozzle assemblies 40a-40n through conduit 50 and conduit 53. Gabuzda et al. teach the use of a plurality of plenums 25m each with a plurality of openings 30m over heat source in order to provide cooling of the circuit boards in a compact space from a single cooling source 24 (see Figs.1 and 3). The amount of air permitted to impinge to a particular area is controlled by the size of the valve (col.3, lines 50-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Hamilton '235 such that it included the use of plurality of elongated plenums each with a plurality of openings over integrated circuits with the controllable valves at each opening in order to provide cooling of a plurality of circuits in a compact space from a single cooling source in view of the teachings of Gabuzda et al.

In regard to claim 10, Gabuzda et al. disclose a second cool air supply chamber 24.

4. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. in view of Gabuzda et al. as applied to claims 1 and 6 above, and further in view of Yoo (U.S. Patent Number 6,698,718).

Yoo teaches the use of rotary valve having a cylindrical body 104 with a central opening 105 for using in controlling air flow (see Figures 5A-5C). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of

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Hamilton such that it included the use of rotary valves having a cylindrical body with a central opening for using in controlling cooling air flow in view of the teachings of Yoo.

5. Claims 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. (U.S. Patent Number 5,582,235) in view of Gabuzda et al. (U.S. Patent Number 4,851,965) and further in view of Yoo (U.S. Patent Number 6,698,718).

Hamilton '235 discloses a valve system for a burn-in oven having a plurality of controllable valves 100a-100n positioned above a plurality of integrated circuits 25a-25n on a burn-in board 15 in which each valve is operated by a separate electric motor 110a-110n under control of a controller 35 in response to the individual integrated circuit's temperature sensors 30a-30n. Hamilton '235 discloses a blower 45 providing a gas flow to the nozzle assemblies 40a-40n through conduit 50 and conduit 53. Yoo teaches the use of rotary valve having a cylindrical body 104 with a central opening 105 for using in controlling air flow (see Figures 5A-5C) and Gabuzda et al. teach the use of air supply chamber 24 to plurality of plenums 25m each with a plurality of openings 30m over heat source with heat sinks 5a,5b in order to provide cooling of the circuit boards in a compact space from a single cooling source 24 (see Figs.1 and 3). The amount of air permitted to impinge to a particular area is controlled by the size of the valve (col.3, lines 50-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Hamilton '235 such that it included the use of plurality of elongated plenums each with a plurality of openings over integrated circuits with the controllable valves at each opening in order to provide cooling of a plurality of circuits in a compact space from a single cooling source in view of the teachings of Gabuzda et al. and Yoo.

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***Double Patenting***

6. Claims 1-18 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 10/020,348 in view of Gabuzda et al. (U.S. Patent Number 4,851,965). Application 10/020,348 discloses the invention substantially as claimed. However, 10/020,348 discloses controlled fan cooling and does not disclose controlled valve cooling element. Gabuzda et al. disclose valve in the same field of endeavor for the purpose of delivering cooling air. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of 10/020,348 with a controlled valve in view of Gabuzda et al. so as to deliver cooling air.

This is a provisional obviousness-type double patenting rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chen-Wen Jiang whose telephone number is (571) 272-4809. The examiner can normally be reached on Monday-Thursday from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chen-Wen Jiang  
Primary Examiner

